

20 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANS

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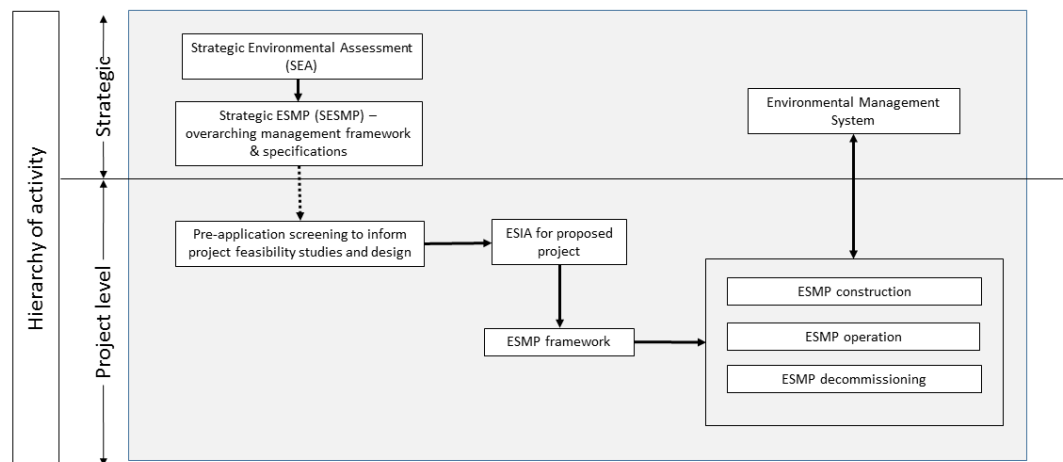
20.1 Introduction

The environmental effects of development are mitigated from two ‘distinct’ perspectives – *ex ante* (before) through environmental impact assessment (ESIA) and *ex post* (after) through environmental management systems (EMS). The need to ensure that the outcomes of environmental assessment are carried through into environmental management and that management practices are adaptive, was first recognised in the 1970s (e.g. Hollings 1978). The use of management plans, particularly Environmental and Social Management Plans (ESMPs), to ensure that mitigation measures identified through ESIA are implemented and monitoring is carried out, has been a steadily evolving area of ESIA practice since the 1990s. A study by the Institute for Environmental Assessment and Management (IEMA) into the state of EIA practice in the UK reported that 80% of its survey respondents would welcome inclusion of the requirement to develop Environmental Management Plans (EMPs)¹ as mandatory in EIA legislation (IEMA 2011); Bennett *et al.* (2016) observed that 95% of the practitioners interviewed for their UK based study dealt with EMPs ‘either all the time or fairly regularly’. Interest and use ESMPs is increasing globally with impetus coming from international financial institutions (e.g. European Bank for Reconstruction and Development (EBRD) §20.3.1) which include the requirement for management plans within their policies and performance requirements when providing project finance.

ESMP practice has evolved through a ‘bottom up approach’ where practitioners have shaped and developed the arena of practice, as opposed to a ‘top down’ legislative process which set boundaries to what should be addressed. Consequently, practice is diverse, terminology can vary and there are a range of ‘management plans’ which might be used differently in different contexts or geographical settings. Management plans developed at project level can have a broad remit applicable to a number of stages in the development lifecycle, or they may have a narrow focus addressing specific stages or issues (such as a construction management plan, ecological management plan etc.). ESMPs can also exist at strategic or institutional level and link into overarching management systems (see Figure 20.1). Whilst recognising the range of variations that exists, this chapter focuses on the key principles associated with the development and implementation of project level ESMPs.

¹ UK practitioner vernacular is to refer to EIA/EMP rather than ESIA/ESMP

Figure 20.1 ESMPs within environmental assessment and management processes (Based on Lochner 2005)



20.2 Definitions and concepts

An ESMP is a document that sets out the actions needed to manage environmental and social effects associated with the construction, and operation of a development (additional ESMPs may be developed for demolition/restoration phases). It includes details on when each action should occur and who is responsible for its delivery. ESMPs are frequently included in the outcome of the ESIA process (i.e. the Environmental Statement/ESIA Report), summarising the mitigation, compensation, monitoring and enhancement measures required to effectively manage the predicted environmental and social effects of a development if it gains development consent (IEMA 2016 in press).

20.2.1 Linking impact assessment and environmental management

Whilst the *ex-ante* impact assessment of proposed development is now an established environmental policy instrument, there is on-going debate about how effective it really is (e.g. Sadler 1996; Carroll and Turpin 2002; Turpin 2010). However, effectiveness studies have tended to focus on procedural aspects within national jurisdictions (Wood 2003), with less attention paid to the more substantive outcomes i.e. the operational and post closure environmental performance of projects. ESIA is a key integrative and anticipatory environmental decision making aid, but it is only one element of the policy toolbox (Wood 2003). Other elements include the monitoring and evaluation of project impacts and the subsequent management of environmental performance.

EIA in a formal sense first appeared in the USA in 1969 through the National Environmental Protection Act (NEPA) and has spread globally since (Glasson *et al.* 2012). Environmental management also originated through legislative processes, although with primary focus on aspects of public health protection and pollution prevention. Through the uptake of institutional voluntary environmental management systems (EMS) (e.g. ISO14001 (ISO 2015) and EMAS (2015)), environmental management now incorporates a wider range of issues of relevance to ESIA. Whilst there are differences and similarities between ESIA and EMS, a growing body of literature considers how to link the two so that environmental assessment and management are seen as a continuous process (Broderick 2012; Perdicoulis *et al.* 2012). As Holling (1978) argues: “*If assessment continues into the future, then prediction loses its status as a goal and assessment merges into environmental*

management. Prediction and traditional ‘environmental impact assessment’ suppose that there is a ‘before and after’ whereas environmental management is an ongoing process”. More recently, an international study into the effectiveness of environmental assessment (Sadler 1996) emphasised that without going beyond the EIA phase “the process risks becoming a pro-forma exercise rather than a meaningful exercise in environmental management.”

20.2.2 Early ‘practice-led’ initiatives: The World Bank and Environment Agency (England)

The 1990s witnessed the evolution of practice-led initiatives to integrate environmental assessment and management. For example, in order to manage the environmental impacts of its investments, in 1991 the World Bank introduced “environmental mitigation plans” into its environmental assessment (EA) operating directive (World Bank 1993). The concept evolved within World Bank documentation over subsequent years, being referred to as “environmental mitigation or management plans” and then “environmental management plans” (EMP), with guidance on what should be covered in an EMP being issued in January 1999. The broad aim of an EMP was to “provide an essential link between the impacts predicted and mitigation measures specified within the EA report, and implementation and operational activities” (World Bank 1999).

During the early 1990s the Environment Agency (key environmental regulatory body in England) was also developing its policies and tools to integrate environmental assessment and management. Hickie and Wade (1997) document the development of the concept of “environmental action plans” (EAP) as a way to strengthen the Environment Agency’s environmental assessment process. Prompted partly by the findings of the EIA effectiveness study reported in Sadler (1996), the Environment Agency EAPs detailed “how the protection, conservation, mitigation and enhancement measures for the project will be delivered by the Environment Agency and its contractors” (Hickie and Wade, 1997). More specifically, EAPs:

- confirm details of environmental parameters and constraints for working in nature conservation areas;
- summarise environmental issues and constraints for the project design team;
- clarify implementation and monitoring of environmental constraints and mitigation measures by Environment Agency staff;
- identify how post-Environmental Statement (ES) changes would be assessed and approved;
- indicate how objectives and targets for successful post-project appraisal would be identified.

A summary of key aspects of the processes in these two early examples are shown in Table 20.1 below. Although titled slightly differently and evolving in response to differing operational needs, some commonalities are apparent between the World Bank and Environment Agency processes.

Table 20.1 Comparison of requirements within early guidance on EMP (source: Durning 2012)

World Bank (1999) – Aspects to be typically addressed within Environmental Management Plans	Hickie and Wade (1997) – Elements of an EAP in EA in England and Wales
	<i>A : Management and monitoring for final design and delivery of the project in accordance with the ES</i>
Summary of impacts Description of mitigation measures	(1) summary of Environmental Assessment Process and the environmental constraints to be taken into account in terms of protection, conservation, mitigation and enhancement measures.
	(2) management of change in project design and implementation in relation to environmental impact;
Institutional arrangements	(3) communication programme to network in-house staff; engineering consultants and contractors; residents;

	landowners; public; user groups; and conservation bodies;
Description of monitoring program	(4) commitment to staff resourcing and procedures, normally a project Environmental Assessment Officer (as an independent member of the project team) and an Environmental Clerk of Works (as part of the supervising Resident Engineering team); Environmental Protection Schedules (EPS) to be checked by the Environmental Clerk of Works on a weekly basis; and Environmental Incident Forms and an associated reporting and follow-up system;
	(5) environmental assessment quality assurance system.
	<i>B: Objectives and targets for each environmental constraint</i>
	(1) objective;
	(2) implementation statement;
Implementation schedule and reporting procedures	(3) targets for objective (to be reviewed at post-project appraisal stage and remedial works instigated if necessary).
	<i>C: Summary of environmental specifications required in engineering contract</i>
	(1) contractors workmanship including procedures and limitations;
Cost estimates and sources of funds	(2) materials specifications.
	<i>D : Drawing showing all constraints and comments</i>

Other examples from this period include approaches developed by the Hong Kong Environmental Protection Department (Sanvicens and Baldwin 1996) and the use of ‘environmental management programmes’ in Western Australia (Bailey, 1997).

20.2.3 Contributions from research

Following the arrival of formalised (but still voluntary) environmental management systems in the 1990s, research examining EIA-EMS links began to appear in the academic literature. Sheate (1999) observes that the abundance of academic articles on the integration of EIA with other tools served to highlight the growing interest in research associated with extending EIA beyond its traditional boundaries. Of particular note is the work of Eccleston (1998), who developed a conceptual framework showing the potential for synergy between EMS and the EIA process (within NEPA), arguing that integrating the two could “*lead to more effective planning and enhanced environmental protection, while streamlining compliance*” (Eccleston 1998). New concepts also started to appear in the literature, particularly the need for EIA ‘follow-up’ after project approval decision making. According to Arts et al. (2001), environmental management is one of the four key activities of EIA follow-up (which also include monitoring, evaluation and communication). Morrison-Saunders and Arts (2004) describe management in this context as: “*making decisions and taking appropriate action in response to issues arising from monitoring and evaluation activities*” and as such can be considered a key to coordinating other follow-up activities.

However, whilst there is a body of academic work on theoretical ways of ‘coupling’ assessment and management, research that focuses upon practical implementation is scarce. In Canada, Barnes and Lemon (1997) describe a proponent-driven EMP process for transport infrastructure that extended beyond the construction phase to encompass the full life span of the development. Other examples of the use of EMP in practice include Marshall (2004) and Broderick and Durning (2006). Further consideration of the theoretical and practical ways of extending environmental assessment into management is detailed in Perdicoulis *et al.* (2012) which includes an example on the current use of EAPs by the Environment Agency (Fuller *et al.* 2012). More recently, research on stakeholder

perceptions of EMPs in the UK by Bennett *et al.* (2016) notes that the use and effectiveness of EMPs varies in practice.

20.2.4 Incorporating the social dimension: from EMPs to ESMPs

Social impact assessment (SIA) (see Chapter 13 and 14) is, in some geographical regions, undertaken as a separate assessment to EIA. Research on the use of management plans to implement the outcomes of SIA has only relatively recently started to appear. Franks and Vanclay (2013) provide a useful comparison of social impact assessment processes (see Table 20.2), including approaches developed by project funders, project proponents, and decision makers. Most recently Vanclay *et al.* (2015) have updated guidance on the development of social impact management plans (SIMPs) which has been published by the International Association for Impact Assessment (IAIA) (see §20.3.4).

More widely, since the beginning of the millennium, the development of an explicitly social aspect within EIA has been driven by the World Bank, IFC, and other influential funding institutions including the European Bank for Reconstruction and Development (EBRD) and the Asian Development Bank (ADB 2003) (see §20.3.1). EIA became ESIA for many impact assessment practitioners working on projects financed by financial institutions operating under the Equator Principles (see §20.3.2). This change in practice and language was also mirrored in the move from EMPs to ESMPs.

Whilst EMP / ESMPs have now become well-established in practice, the exact nature of their application is highly variable and therefore any examples will only serve to highlight a particular aspect of practice. Box 20.1 provides a short case study of an ESMP.

Table 20.2 - Comparison of three forms of social impact management processes (Source: based on Franks and Vanclay, 2013).

Criteria	IFC ESMP (2006-current; revised 2012)	Anglo American SEAT (2002-current; revised 2007, 2012)	Queensland SIMP (2008–2012)
Scope	Integrated (social, environmental, economic)	Socio-economic (link to environment)	Socio-economic
Driver	Required as a condition of an IFC loan (at project development)	Voluntary corporate policy (operational projects) to meet public expectations	Required for project development approval (prior to construction)
Application	All IFC funded development projects with significant social and environmental risks	All operational mining projects managed by Anglo American require a SEAT Assessment every 3 years	New or expanded mining and petroleum projects within the identified resource provinces requiring an approved EIS
Public availability of plan	Encouraged	Yes (SEAT report public, SMP internal)	Yes
Public involvement during preparation	Government and public involvement encouraged	Stakeholder involvement in issue identification, prioritization and development of management options	Stakeholder involvement and public comment period on draft plan
Issue prioritization	Wide coverage	Prioritization of key stakeholder identified issues	Prioritization of key socio-economic issues and rated by consequence
Plan aligned with government or regional planning	Government and regional planning should be taken into account and responsibilities differentiated	No explicit requirements but engagement required with government stakeholders to encourage alignment	Negotiated with government — designed to align with community plans (local) and regional plans (State)
Plan linked to internal management systems	Yes - an Environmental and Social Management System is also required	Yes - direct link to Anglo American <i>Social Way</i> and management systems	Not explicitly - up to project proponent
Review process and link to assessment	Plan linked to impact assessment. Triggered by loan application. Unspecified assessment process during review of plans or as part of management system.	SEAT Assessment is triggered every 3 years. This is a formal opportunity to update the SMP. Includes opportunity for stakeholder review.	Plan initially developed as part of project level impact assessment. Annual reporting during construction. External review usually after 2 years then every 3 years. Process undetermined.
Coordination with other developments	Developments required to understand and respond to impacts of third parties but no specific requirement to coordinate.	Not explicitly but stakeholder engagement requirements may encourage consideration	Plans include collaborative activities across multiple developments and must consider other known projects
Framework for activities within plan	Mitigation, avoidance and offset of negative impacts	Mitigation and benefit delivery through core business activities. Legacy planning for project closure	Predominantly mitigation framework for social infrastructure and a focus on benefit delivery
Partnerships for the delivery of programs	No explicit requirement	Yes — tool within SEAT to encourage identification of partnerships.	No explicit requirement but usually conditioned as part of approval
Reporting and social impact monitoring	Monitoring process and grievance handling required. Public participation encouraged.	SEAT public reporting and grievance handling process required. Impact monitoring encouraged. An output monitoring framework for community development sits alongside SEAT	Process for government reporting and requirement for monitoring plan and grievance handling
Articulation of all proponent community commitments	Lists plan commitments	Lists plan commitments and company policies	Lists all project related commitments conditioned as part of approval

Box 20.1: RWIMI Small Hydro Power Project, Kasese, Uganda (Eco Power Holdings Ltd 2013)

The Rwimi Small Hydro Power Project is a proposal for 6.6MW of installed generating capacity to be built and operated by Eco Power Holdings Ltd. By harnessing the hydropower potential of the Rwimi river (Kitwambe Sub County, in Kasese District, Uganda) the proposal will generate an annual energy output of 24.8GWh

An ESMP has been developed which flows from the ESIA, the Resettlement Action Plan (RAP) and other statutory permits and licenses issued by the Ugandan authorities. Guided by the IFC Performance Standards, the ESMP aims to ensure the adoption of a strategic approach to mitigate the environmental, health and safety impacts of the project according to accepted guidelines and best practice. The ESMP (a 220+ page long document) is intended to be used during the full project life cycle to serve as a 'ready reference' for the developer and key stakeholders (namely contractors, sub-contractors, external consultants and other statutory agencies). Major responsibility of implementing the ESMP lies with the developer (Eco Power Holdings Ltd) and the civil contractors (during the construction phase). The ESMP is structured in four parts:

PART 1: introduction to the project, impacts, the organizational structure for the management of the ESMP, together with detailed description of the roles and responsibilities of the respective parties.

PART 2: provides details of the Environmental and Social Impact Mitigation Action Plans;

PART 3: explains requirements for compliance monitoring and reporting; provides guidelines and format to be used to report on mitigation actions as required by various lead agencies.

PART 4: supplemental management plans to meet additional requirements stipulated by the IFC PSs including:

- a. Public Consultation and Disclosure Strategy/Plan (PS1)
- b. Employment Policy (PS 2)
- c. Explosive Handling and Blasting Procedure (PS2)
- d. Slope Protection and Soil Conservation and Erosion Control Plan (PS 3)
- e. Construction Waste/Spoils Disposal Management Plan (PS3)
- f. Hazardous Materials Management Plan (PS3)
- g. Occupational Health and Safety Management Plan (PS 4)
- h. Community (Public) Safety Management Plan (PS4)
- i. Traffic Management Plan including (PS 4)
- j. Chance Find Procedure (unearthing of unexpected graves or sites of heritage significance) (PS8)

20.3 Key policy, standards, legislation and guidance

Practice in the use of ESMPs has mainly been driven forward through the use of performance standards and voluntary codes or principles, particularly those developed by major development bodies (International Financial Institutions) and investment banks. These are outlined below, followed by selected examples of national legislation that links EIA / ESIA with follow-up activities, and a brief overview of relevant guidance.

20.3.1 Policies and standards: International Financial Institutions (IFIs)

Whilst most multi-lateral development banks now have policy requirements and guidance on ESIA, the **World Bank** first developed its environmental guidelines in 1988. These were superseded in 1999 by the *Pollution Prevention and Abatement Handbook* (World Bank 1999) and its first operational directive on ESIA. The World Bank Group's Operational Policy (OP) 4.01 'Environmental Assessment' (World Bank 2013) and related documents support the preparation of World Bank Group projects. Environmental Management Plans (EMP) are listed in OP4.01 as an instrument used to comply with the Bank's environmental assessment requirements. EMPs are 'integral' to the environmental assessment of projects classed as likely to have significant impacts that are 'adverse, sensitive or unprecedented'. The EMP details measures to mitigate the environmental impacts and the actions needed to implement these measures. The borrower has to report on implementation of the EMP during project implementation.

The **International Finance Corporation (IFC)** adopted its Environmental and Social Safeguard Policies and its Disclosure Policy in 1998. These were superseded in 2006 by the Policy and Performance Standards (PSs) on Social and Environmental Sustainability. These are applied to all IFC funded investment projects in order to minimize their impact on the environment and affected communities. The PSs were further revised in 2012 (IFC 2012) resulting in the following list:

1. Assessment and Management of Environmental and Social Risks and Impacts
2. Labour and Working Conditions
3. Resource Efficiency and Pollution Prevention
4. Community Health, Safety and Security
5. Land Acquisition and Involuntary Resettlement
6. Biodiversity Conservation and Sustainable Management of Living Natural Resources
7. Indigenous Peoples
8. Cultural Heritage

Performance Standard 1 highlights the importance of:

- (i) integrated assessment to identify the environmental and social impacts, risks, and opportunities of projects;
- (ii) effective community engagement through disclosure of project-related information and consultation with local communities on matters that directly affect them; and
- (iii) the client's management of environmental and social performance throughout the life of the project. IFC (2012)

Performance Standards 2 to 8 establish requirements to *"avoid, minimize, and where residual impacts remain, to compensate/offset for risks and impacts to workers, Affected Communities, and the environment"* (IFC 2012). Importantly, where 'risks and impacts' are identified *"the client is required to manage them through its Environmental and Social Management System (ESMS) consistent with Performance Standard 1"* (IFC 2012).

Monitoring and follow-up are integral to the PSs and are intimately linked to the IFC Environmental, Health and Safety (EHS) Guidelines (Rankin *et al.* 2008). The EHS Guidelines (IFC 2016) are described by the IFC as: *“technical reference documents with general and industry specific examples of Good International Industry Practice (GIIP) Reference to the EHS Guidelines by IFC clients is required under Performance Standard 3 whilst IFC uses the EHS Guidelines as a technical source of information during project appraisal activities”*. Linked to this is the IFC’s Environmental and Social Review Procedures Manual (IFC 2013) which describes the approach used for *“monitoring and recording client performance”* against the PSs. The PSs are also used by other financial institutions on a voluntary basis.

The **European Bank for Reconstruction and Development (EBRD)** adopted its first environmental policy in 1991. This policy and the related Performance Requirements (PRs) were updated in 2008 and 2014 (EBRD undated). Bank-financed projects are expected to meet good international practice related to sustainable development and the EBRD has defined 10 specific PRs, one to eight of which are the same as the IFC PSs with the addition of two further PRs addressing Financial Intermediaries and Information Disclosure and Stakeholder Engagement.

EBRD (2014) require all companies/ institutions in receipt of project funding to have a systematic approach to managing the associated environmental and social issues and impacts to ensure compliance with the Bank’s Environmental and Social Policy. EBRD PR1 (Assessment and Management of Environmental and Social Impacts and Issues) requires the development of a programme of actions to address the environmental and social impacts which can consist of a *“combination of documented operational policies, management systems, procedures, plans, practices and capital investments, collectively known as Environmental and Social Management Plans (ESMPs)”*.

The **Equator Principles** (2013) (EPs) provide a financial industry benchmark for determining, assessing and managing social and environmental risk in project financing. The EPs are a voluntary scheme, based on World Bank and IFC guidelines (see §20.3.1), that oblige participating financial institutions to finance projects only if it can be guaranteed that the social and ecological impact of projects are assessed. There were 84 signatories (from 36 countries) to the EPs in June 2016, covering 70% of project finance debt in emerging markets. These EP Financial Institutions (EPFIs) have consequently adopted the EPs in order to ensure that the projects they finance are developed in a manner that is socially responsible and reflect sound environmental management practices.

There are 10 Principles, but Principle 4 (Environmental and Social Management System and Equator Principles Action Plan) is the key one relevant to ESMPs. For projects screened as requiring assessment (based on the IFC environmental and social categorisation process), the client is required to develop or maintain an Environmental and Social Management System (ESMS) to manage risks on an on-going basis. The EPs indicate that the ESMS includes *“policies, management programs and plans, procedures, requirements, performance indicators, responsibilities, training and periodic audits and inspections with respect to environmental or social issues, including Stakeholder Engagement and grievance mechanisms”* (Equator Principles 2013). The ESMS provides the overarching framework through which an ESMP is implemented in order to address issues identified during the assessment process.

The ESMP *“...summarises the client’s commitments to address and mitigate risks and impacts identified as part of the Assessment, through avoidance, minimisation, and compensation/offset. This may range from a brief description of routine mitigation measures to a series of more comprehensive management plans (e.g. water management plan, waste management plan, resettlement action plan, indigenous peoples plan, emergency preparedness and response plan,*

decommissioning plan). The level of detail and complexity of the ESMP and the priority of the identified measures and actions will be commensurate with the Project's potential risks and impacts" (Equator Principles 2013).

Under Principle 7 (Independent Review), and as part of the due diligence process, the 'Assessment documentation' (including the ESIA, ESMPs, the ESMS, or Stakeholder Engagement process documentation) is reviewed by an independent environmental and social consultant. Where the documentation does not meet the required standards to the satisfaction of the EPFI, then an Equator Principles Action Plan (AP) is required to prioritize actions to address the gaps and secure compliance. The independent consultants also play a role in proposing the contents of the AP.

20.3.3 Selected examples of related legislation

There is no legislative requirement to produce ESMP explicitly, although various pieces of legislation have (or have had) a requirement for monitoring to be carried out post EIA. Examples of countries that are acknowledged as having more sophisticated systems of environmental controls, particularly in relation to EIA follow-up, include the following:

- In Hong Kong the Environmental Monitoring and Auditing (EMA) component of the EIA Ordinance includes a requirement for an 'Independent Environmental Checker' to systematically verify that mitigation measures proposed in the ES are fully implemented.
- In South Africa, EMPs are usually prepared for applications submitted within the regulations promulgated under the Environment Conservation Act (Act 73 of 1989). EIA regulations are being revised and will be replaced by regulations promulgated in terms of the National Environmental Management Act (Act No. 107 of 1998).
- In the Netherlands, the Environment Management Act (EMA) (1994) and the EIA Decree was for many years regarded as one of the most effective in Europe (Glasson *et al.* 2012; Sadler 1996; Wood 2003). It included a requirement for follow-up, although it is acknowledged that the process was slow to commence, with only a 'handful' being carried out in the first few years (Arts 1998). The legislation has recently undergone 'modernisation' (Runhaar 2011) that has removed some of the mandatory review requirements.
- In Canada, Noble (2010) notes that informally, EIA has increasingly becoming a routine part of the environmental management and auditing systems of municipalities and corporations. Early and sustained public involvement throughout the process is a key part of Canadian law together with the monitoring and managing actual outcomes, although the effectiveness of follow-up monitoring and enforcement has been criticized (see Gibson 2012). The Canadian Environmental Assessment Act (CEAA) was substantially amended in 2012 and whilst this has been seen as a retrenchment, one positive outcome involves the inclusion of an enforceable decision statement that sets out mitigation and follow-up monitoring requirements (Gibson 2012).

The continuing absence of formal follow-up (monitoring) requirements in the EC Directive was felt to limit the effectiveness of EIA in the EU and to be a 'cause for concern' (European Commission, 2009). However, the new EU EIA Directive (2014/52/EU) includes the introduction of mandatory monitoring for significant adverse effects (Article 8).

20.3.4 Good practice guidance

A number of different organisations have produced good practice guidance which addresses ESMPs and a selection is now briefly outlined.

International Council for Mining and Metals (ICMM)

ESIA (i.e. *assessment*) is typically associated with the exploration and feasibility stages of the mining project cycle, whereas EMS (i.e. *management*) is more closely associated with operations and mine closure. The ICMM guidance emphasises that the systems, tools and processes of ESIA and EMS are applicable at any and all stages of the mining development lifecycle i.e. development, operation and closure (ICMM 2010). For example, they highlight the relevance of implementing an EMS during exploration to provide a framework for identifying and managing impacts at this early stage. Similarly, the determination of the significant aspects for an EMS may require the application of the evaluation and assessment stages of an ESIA. ICMM views ESIA as a process for managing environmental and social impacts rather than an exercise solely linked to permitting requirements. Whilst the ICMM do not provide specific guidance on how to produce EMPs, they highlight their use as good practice and as a related part of an EMS. The ICMM also identifies Anglo American's Socio-Economic Assessment Toolbox (SEAT) (see also Table 20.2) as a good practice method for assessing and managing social impacts (Anglo American 2012)

Design Manual for Roads and Bridges (DMRB)

The DMRB was introduced in 1992 in England and Wales and subsequently in Scotland and Northern Ireland (Department of Transport and Highways Agency (DTHA) 2011). It provides a comprehensive system which accommodates all current standards, advice notes and other published documents relating to the design, assessment and operation of trunk roads (including motorways). Environmental management/action plans (EMPs) are a key component in the operational aspects of the environmental performance of roads and highways (DTHA, 2011, Vol11). DMRB specifies the requirement for an EMP to be developed prior to any work being carried out on a project and defines the key purpose of the EMP as being to guide the environmental management during the implementation of the project. In 2014 an Interim Advice Note to guide the development of EMPs was published (DTHA 2014). This introduced a new EMP stage - the Handover Environmental Management Plan (HEMP) – which should be drawn up once the project is completed. The aim is for essential environmental information to be conveyed to the client and “*crucially to the body responsible for the future maintenance and operation of the asset*”.

The International Association for Impact Assessment (IAIA)

IAIA have issued guidance on assessing and managing the social impacts of projects (Vanclay 2015) which includes a typical contents list for a Social Impact Management Plan (SIMP) (see Table 20.3 below). IAIA do not currently provided similar guidance on EMP or ESMP.

Table 20.3 – Typical SIMP content (Source: Vanclay 2015)

Chapter Title	Description of contents of chapter
Cover	
Inside Front Cover	Publication statement indicating the authors (i.e. names of the individuals responsible for doing the work and writing the report), publisher, date of publication and other information to establish the nature and purpose of the document.
Executive Summary	A short statement of key issues and findings.
Expert Review Statement	A letter/report from any expert or peer reviewer (or perhaps a joint statement if there was a number of reviewers) to indicate how the review was conducted, what constraints applied to the reviewers, and any comments, concerns and recommendations of the reviewers. A response from the authors to the review might also be appropriate.
Introduction	A general introduction to the report making the purpose of the report clear, perhaps including a short general statement about how the document connects to SIA literature/philosophy.
Project Summary	A good description of the project and all ancillary activities so that readers can get a sense of the project. Where project alternatives or options exist, they could be explained here.
Methodology	A statement about the overall design of the SIA, what methods were used, what community engagement processes were used, and how ethical issues were considered and addressed. Perhaps definitions and/or a discussion of key concepts. Some link to the SIA and social research literature would be expected here. A discussion of the governance arrangements for the conduct of the SIA

	should be provided. Importantly, the limitations of the applied methodology would also be included, including decisions to narrow or expand the scope over the course of the SIA.
Applicable Legal Framework and Standards	A discussion of the legal framework(s) and applicable legislation, regulations and guidelines that apply to the particular case. This would include not only local legislation/regulation, relevant institutions and their responsibility towards the project, but also mention of international standards, such as the IFC Performance Standards, guidance from international industry organisations, and reference to this SIA guidance document.
Community Profile and Social Baseline	If an extended community profile and social baseline are to be included as appendices, then at least include a summary of key characteristics and key stakeholder groups here; alternatively include the community profile and baseline data here. Key historical issues should also be discussed. Key aspects of the physical environment that may be relevant to understanding the context should be included too.
Scoping Report	A statement of all potential social impacts considered in the assessment phase. The disposition of each impact considered should be made clear. Where this is presented as a separate report, a summary should be provided. Alternatively, this can be an appendix.
Prioritized Listing of Key Social Impacts	This is a listing of the residual impacts with a discussion of how different stakeholders are affected. There should be a particular focus on Indigenous peoples, women and vulnerable groups.
Resettlement (Summary)	If resettlement is required, or if physical or economic displacement will occur, a short description of how the resettlement process will be undertaken, what compensation will be provided and how it will be determined, and what measures will be taken to restore and enhance livelihoods. A fully-developed Resettlement Action Plan will be required as a separate document.
Summary of Mitigation and Management Measures	A list of mitigation and other management measures to address social issues should be provided. There should be a costing and timeframe for implementation for proposed mitigation measures.
Monitoring Plan and Contingency Plan (Adaptive Management)	A plan for how monitoring will be undertaken – what will be monitored, how monitored, how often and who is responsible, as well as how the company will respond should an allowance threshold be exceeded – needs to be provided.
Benefit Statement	This is a statement of the likely project benefits to the local communities, including of all proposed social investment actions, and local content and local procurement strategies.
Ongoing Community Engagement Strategy and Grievance Mechanisms	A description of the intended ongoing community engagement processes. Also a description of what grievance mechanisms will be provided and what processes will be used for managing grievances.
Governance Arrangements	A discussion of the governance arrangements that will apply to the ongoing community engagement processes, the grievance mechanisms, the monitoring process, and to ensure the ongoing acceptability of the social investment program.
References	A list of all references used in the report, and any key references that informed the design of the SIA research.
Appendices	The appendices that are to be included will vary from project to project and will be affected by what is included in the body of the report but may include: questionnaires, interview schedules, consent form templates, an extended community profile, baseline data; a scoping report (i.e. a listing of all issues considered as possible social impacts).

The Institute for Environmental Management and Assessment (IEMA)

As part of the IEMA ‘Best Practice Series’, *Environmental Management Plans* (IEMA 2008) provides comprehensive guidance on the purpose, benefits, design, implementation and review of EMPs in EIA practice in the UK. A model EMP structure is presented which it proposes should comprise: a review of the project proponent’s existing policies; details of the project team roles / responsibilities; summary of emergency procedures including in the event of a breach of EMP measures; EMP implementation cost estimates; record of consents and permissions; and a record of significant changes (including responsibilities for oversight).

Since its publication, UK EIA practice has given increasing consideration to the use of draft EMPs in Environmental Statements (ES) to systematically set out the mitigation actions identified during the iterative EIA and design process.

In July 2016 IEMA launched its new EIA/EMP guide² “**Delivering Quality Development**”, It aims to improve practice, through the use of an Environmental Management Plan (EMP) as the primary mechanism which accompanies an ES to capture the EIA conclusions and set out the actions needed to manage environmental effects during construction and operation of a development.

20.4 Developing an ESMP

As noted in §20.2, an ESMP is a document that sets out the actions needed to manage the environmental and social effects associated with the construction and operation of a development, including details on when each action should occur and who is responsible for its delivery. Due to the evolutionary path it has followed (§20.1) practice is diverse, terminology can vary and there are a range of ‘management plans’ which might be used differently in different contexts or geographical settings.

The following section sets out a generic outline methodology for developing an ESMP and provides guidance on the likely structure and content. It builds on the World Bank’s (1999), Lochner (2005), IEMA (2011 and 2012) and Vanclay *et al.* 2015.

20.4.1 Outline methodology

Research by IEMA (2012) has identified that engaging the principal contractor (or their representatives) during the ESIA process and when drafting an ESMP is the most crucial action that needs to be undertaken if an ESMP is to be successful. The effectiveness of an ESMP in managing impacts is greatly enhanced when the actions proposed are built into contractual agreements and there is a clear indication of who will have overall responsibility for implementation. An effective *change management process* is also required to ensure that actions set out in the ESMP can be modified in order to remain relevant to any changes that take place post-consent i.e. it needs to adopt a flexible and adaptive management approach to mitigation and enhancement (IEMA 2011).

Both Lochner (2005) and IEMA (2008, 2016) identify the additional following key principles for successful ESMPs:

- The cost of the mitigation actions and implementation of the ESMP (including estimates of recurring expenses e.g. for training and environmental awareness raising, monitoring and auditing and corrective actions) should be identified during the pre-consent phase and built into the budget for the development
- Competent environmental professionals should be involved in the design and specification of mitigation actions and also in conducting audits during the implementation phase
- Relevant stakeholders should be engaged during the ESMP development, implementation and revision
- Roles and responsibilities need to be clearly defined e.g. for the implementation of management actions, monitoring implementation, setting criteria/timeframes
- There should be a document handling and control system and all relevant legislation, standards, guidelines, permits, licences should be identified
- Reporting procedures and practices should be identified with management reviews scheduled for key stages in the life-cycle of the project
- Pro-actively collaborate with stakeholders, both internally within the project team (developer/designer/contractor/construction delivery teams) and externally (consenting authority and key stakeholders);
- Presentation of mitigation to ensure transfer to mechanisms for delivery; and

² The authors of this chapter led the production of early drafts

- Effective change management process to ensure that mitigation set out in the initial consenting documentation is kept relevant to changes/additional information once the project moves into subsequent phases.
- The approach to non-compliance should be described in the EMP and also specified in relevant contractual agreements.

20.4.2 Recommended Generic structure of an ESMP

A recommended structure for an ESMP is provided in Table 20.4 below. This structure is generic and should be adapted as necessary as an ESMP should always be bespoke to the scale and location of the project.

Table 20.4 – Recommended structure for an ESMP based on IEMA (2008), Lochner (2005) and Vanclay (2015)

Cover	To record issue number and date, revisions and reasons for changes, issuing authority/contact details.
Contents	
Executive summary	Key issues and findings.
Introduction	Including a summary of the project , the host environment (biophysical, economic and social components) and aims of the ESMP.
Project summary	<p>This should cover project location, layout plans, project phases (e.g. design, construction, commissioning, operations and decommissioning), construction activities, operational processes and activities, employment and labour, directly associated infrastructure, and project schedule.</p> <p>A brief description of the affected social and environmental aspects should also be provided, particularly those elements of the environment that may be impacted upon by the project and which should be included in the monitoring programme. The environment in this context includes the biophysical, economic and social components. Key information about the local environmental management context for the project (e.g. if the project environmental management is located within an overarching EMS, ESMS or SEMP) and the relevant legal and planning context should be provided. The information should be drawn from the ESIA Report/Environmental Statement and/or Scoping Report.</p>
Summary of effects	A summary should be provided of the predicted positive and negative effects associated with the proposed project that require management actions (i.e. mitigation of negative effects or enhancement of positive effects). The necessary information should be drawn from the ESIA process.
Methodology for ESMP including limitations	
Project proponent's existing policies	
Project team roles and responsibilities	This will be particularly important where there are multiple organisations involved in a project e.g. several sub-contractors. This section should also detail where queries should be directed within the team (including contact details), and procedures to escalate up to technical specialists as required.
Applicable legal framework and standards consents and permissions	This should provide a record of the consents with which the project is taking place.
Cost estimates for ESMP implementation	It is the responsibility of the proponent/developer to fund the cost of ESMP implementation, however, the proponent/developer and organisation undertaking the ESIA should liaise.

Environmental and socially significant changes register	<p>This should detail procedures to be followed if any significant changes are encountered once a project commences on the ground which would result in a change to the ESMP e.g. the use of alternative construction methods or design.</p> <p>A tabular format document to record changes to construction methods, design and mitigation and the implications of these changes and authorising personnel.</p> <p>This should also detail who has responsibility for overseeing changes and ensuring these do not conflict with any consenting or planning conditions.</p>
Register of site specific environmental and social actions including resettlement if required	<p>This information, forming the core of the document, should be detailed for each action; a tabular format is often used to provide clarity and ease of reference). Also to include:</p> <ul style="list-style-type: none"> • training of personnel • programme timeline – a visual indication of when measures should be implemented • monitoring – to detail monitoring equipment/methods and schedules
Liaison, grievance mechanism and consultation requirements	<p>Including any requirements for prior authorisation or provision of monitoring data, also key contacts (details for internal and external contacts).</p>
Non-compliance and management reviews	<p>The approach to non-compliance (whether based on penalties or incentives) must be described in the ESMP and specified, for example, in tender documents and contracts. The actions specified by the ESMP must be enforced through the legal standing of the ESMP.</p> <p>Management reviews should be scheduled at key stages in the life-cycle of the project and the ESMP revised accordingly</p>
References	
Appendices	<p>To provide further detail on measures e.g. monitoring methodologies to be followed, maps delineating boundaries/areas applicable to measures etc.</p>

20.4.3 Challenges

There are a number of challenges in using ESMPs, which are briefly considered here. A key challenge is maintaining the adaptive element, particularly in relation to large and complex projects. Reflecting on the role of private sector investment in large scale infrastructure projects, Faith-Ell and Arts (2009) observed that *“as early market involvement will usually lead to longer-term contracts, these contracts will have to deal [with] changing contexts – new spatial and environmental developments, new techniques, new regulations and policies etc. As a consequence, there is need for some form of environmental management responsiveness.”* They suggest adopting processes which are in essence those advocated as key by IEMA i.e. the establishment of a system to manage environmental impacts, with careful monitoring of contract requirements and periodic evaluation of environmental performance measures e.g. by the regulator/decision making body or, in the case of IFI funded projects, by the funder.

Aspects of knowledge transfer of essential information can also be problematic if the bodies responsible for the operational stage of the development are different to those involved at the construction stage. In the UK context, arguably there has been a tendency to concentrate the use of ESMP at the construction stage of the development. This was apparent in the early stages of development of the concept when, due to the nature of the projects being delivered by the Environment Agency (in England), the EAP concluded at the point when the development became operational. What is possibly still an issue, and which needs further consideration, are those developments where the ESMP needs to link into the long term operation and ultimate decommissioning stage of a development. The World Bank (1999) guidance states that the ESMP should continue through to the operational stage of developments and be regularly reviewed. Sánchez (2012) highlights the importance of collective learning stating that *“the best EMPs prepared today reflect, in first place, our collective learning about issues such as effectiveness of mitigation*

measures and how to design effective mitigation” and the DTHA has introduced the use of HEMPs (see §20.3.4) to ensure that essential information and learning is transferred between the construction and operation phase of a development.

EIA / ESIA regulatory regimes require the Environmental Statement / ESIA Report to describe the measures proposed to mitigate any ‘significant’ adverse effects of the development and these mitigation measures often include commitments that are influential in the decision to approve the project. Ensuring that sufficient measures are implemented is particularly important for the integrity of the ESIA process, particularly for those affected by a development project. However, research has shown the difficulties in linking the environmental and social mitigation within ESIA to development consent obligations:

- Environmental Statements are often variable in the degree to which the environmental and social mitigation measures they propose can be translated into consent obligations that are enforceable and precise (IEMA 2008; 2011; King 2016).
- Environmental and social mitigation measures proposed in Environmental Statements are often not required through planning consent obligations, and therefore often not implemented (Tinker *et al.* 2005; Mordue 2008). However, additional mitigation measures can be introduced through planning conditions and obligations that were not proposed in Environmental Statements, which points to influences other than the EIA findings (Tinker *et al.* 2005).

20.5 Conclusions

ESMPs are increasingly included in ES/ESIA Reports to summarise the mitigation, compensation, monitoring and enhancement measures required to effectively manage the predicted environmental and social effects of a development if it gains development consent. Delivering successful ESMPs in practice can be the key to ensuring that developments cause no erosion to natural and social capital. The benefits of preparing an ESMP can be summarised as follows (based on IEMA 2008; 2016):

- To create a framework for ensuring and demonstrating conformance with:
 - legislative requirements
 - development consent conditions, and
 - monitoring of mitigation measures set out in ES;
- To provide a link or ‘bridge’ between the design phase of a project, the construction and possibly operational phase;
- To ensure an effective communication and feedback systems are in place between the different actors involved in the project (such as operators onsite, the contractor, the environmental manager and/or consultant, stakeholders, regulators);
- To demonstrate a developer’s commitment to protecting the environment through mitigation; and to
- Drive cost savings through improved environmental and social risk management.

ESMPs are a means of ‘bridging the gap’ between ESIA (typically at desk-based design stage) and ‘real world’ implementation of a project. Like any sound environmental management tool, to be effective, an ESMP must be understandable (e.g. through the use of the vernacular of the language it is written in), practical, contain or require specific actions, include indicators/measurements of success, have responsibilities allocated and be clear with respect to locations and timescales (where and when) for mitigation and monitoring.

The key to advancement of ESMP practice is to enhance learning from experience at all levels of application and practice. This chapter is only a starting point for this learning process and it is hoped that it will help to inform and improve ESMP practice.

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